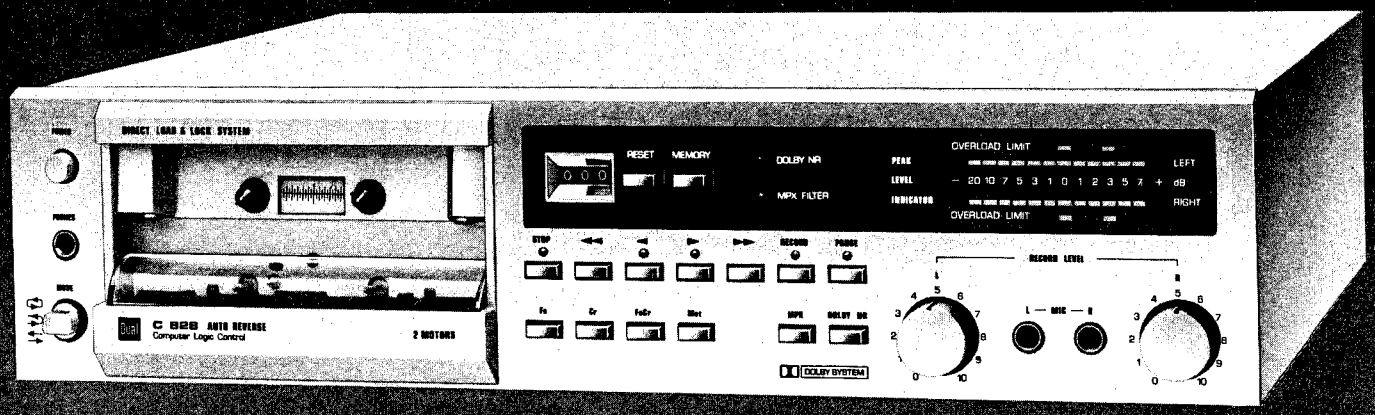
Dual

C 828



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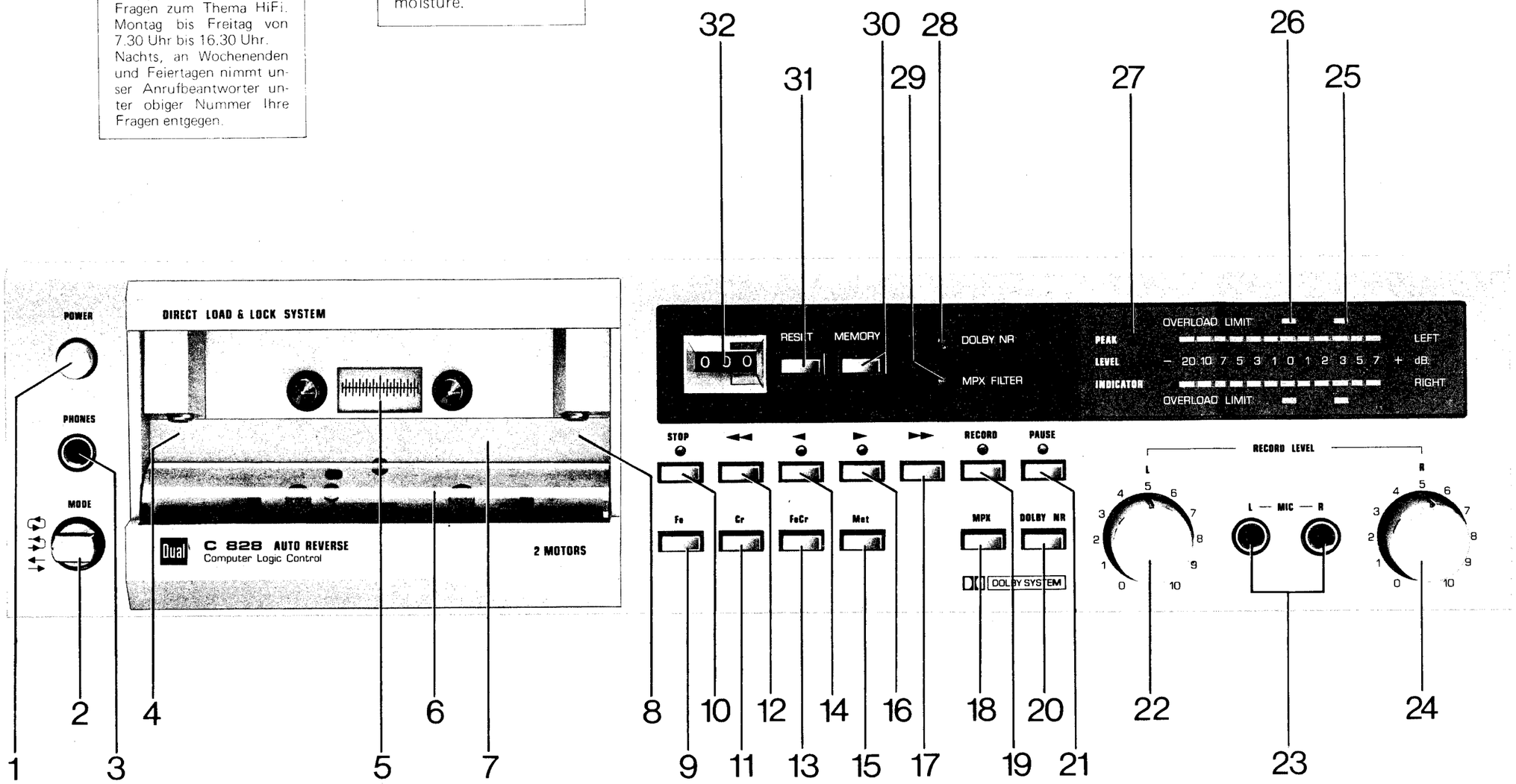
Italiano	pagine 25 – 28

Dual

C 828

Unter der Telefonnummer (0 77 24) 8 32 99 ist der "Technische Beratungsdienst" von Dual für Sie da und gibt Antwort auf alle Fragen zum Thema HiFi. Montag bis Freitag von 7.30 Uhr bis 16.30 Uhr. Nachts, an Wochenenden und Feiertagen nimmt unser Anrufbeantworter unter obiger Nummer Ihre Fragen entgegen.

WARNING: To prevent fire or shock hazard, do not expose this product to rain or moisture.



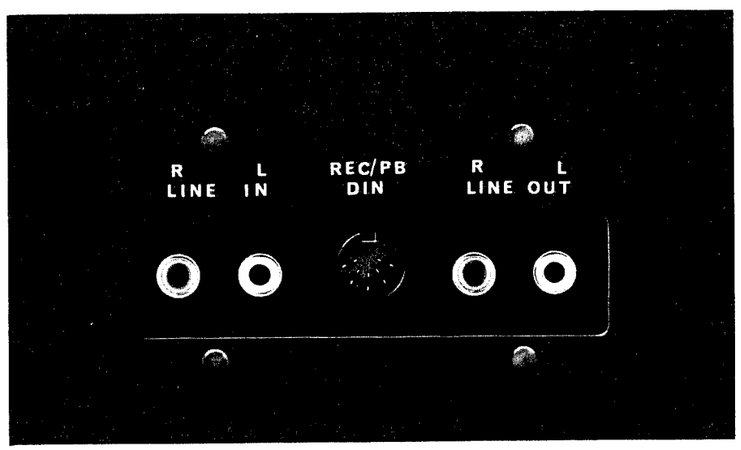


Fig. 1

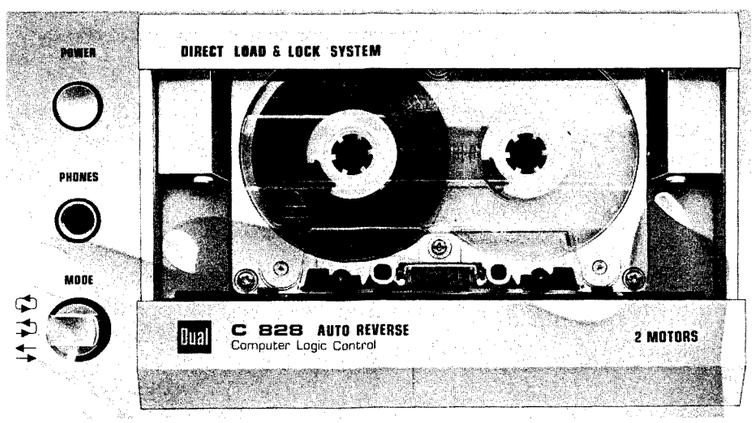


Fig. 2

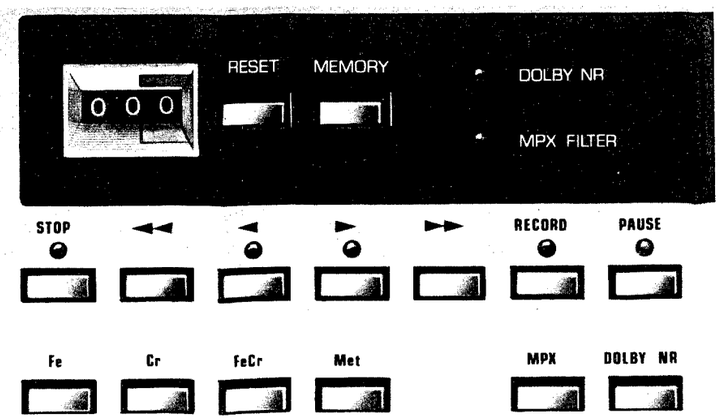
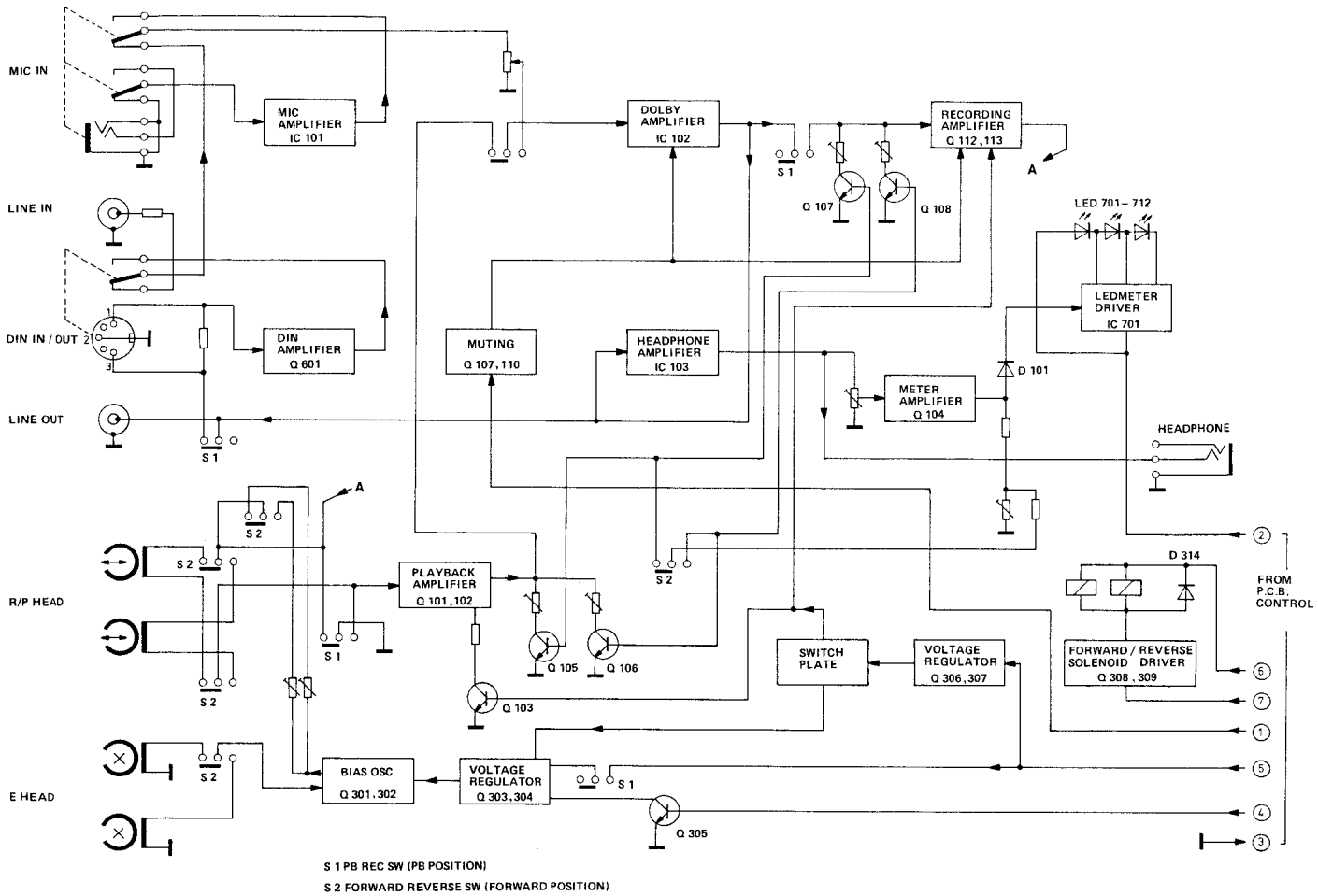
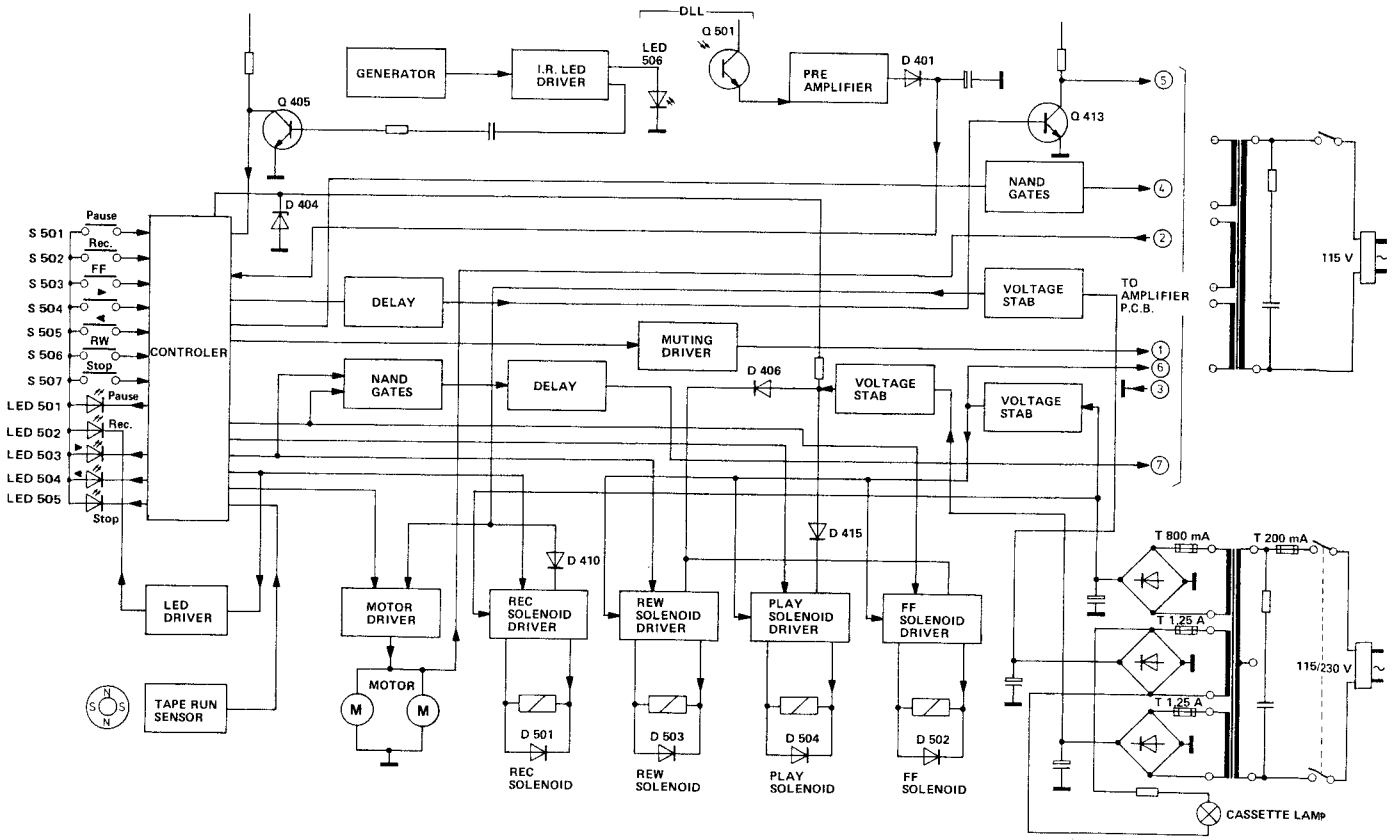


Fig. 3



S 1 PB REC SW (PB POSITION)

S 2 FORWARD REVERSE SW (FORWARD POSITION)



Bandsorten
Folgende Bandsorten sollten bei der entsprechend gedrückten Bandsortenwahltaste abgespielt werden:

Types de bandes
Les types de bandes suivants peuvent être écoutés après avoir appuyé sur la touche de sélection correspondante:

Types of tape
The following types of tape should be played back with the relevant tape selector button depressed:

Bandsoorten
De volgende bandsoorten worden bij de onderstaande instelling van de bandsoorten keuzetoets toegepast:

Tipos de cinta
Los siguientes tipos de cinta deberán ponerse en funcionamiento al pulsar la tecla selectora del tipo de cinta correspondiente:

Bandsorter
Följande bandtyper bör avspelas med motsvarande tangent inkopplad:

Tipi di nastro
Indichiamo il rispettivo tasto selettore da premere per usare i seguenti nastri:

Bandsorte Sorte de bandes Type of Tape Bandsoorte Tipo de cinta Bandsorte Tipo di nastro	Bandsortenwahltaste · Touche de sélection du type de bande · Tape selector button Bandsoorten keuzetoets · Tecla selectora del tipo de cinta · Bandtypsomkopplare Tasto selettore nastro			
	Fe	Cr	FeCr	Metal
Agfa	SFD	Stereochrom	Carat	
Ampex	20/20 + Plus Series Grand Master I	Chromium Grand Master II		
Audio-Magnetics	XHE			
BASF	Ferro super LH Professional I	Chromdioxid·Chrom- Super · Professional II	ferrochrom Professional III	metal IV
DENON	DX 3		DX 5	
EMI	STAR			
Advent		Chromium		
Fuji	FL			Metal Tape
Maxell	UD-XL I	UD-XL II		MX
Memorex	MRX_2	Chromium		
Philips	Super-Ferro	Chromium	Ferro-Chromium	Metal
Scotch-3 M	High Energy	Master II	Master III	Metafine IV
Sony	HF Low Noise	Chrome	Duad Fe-Cr	Metallic
TDK	ED OD SD D	KR SA		MA-R MA

Diese Aufstellung erprobter Cassetten kann naturgemäß keinen Anspruch auf Vollständigkeit erheben. Wir empfehlen grundsätzlich Markencassetten C 45, C 60 oder C 90 zu verwenden.

Cette liste ne prétend pas être exhaustive. Nous conseillons d'utiliser en principe des cassettes C 45, C 60 ou C 90 de marque.

This list of tested tapes can of course never be complete. Basically, we recommend the use of C 45, C 60 or C 90 cassettes made by well known manufacturers.

Deze opsomming van geteste cassettes kan uiteraard geen garantie geven voor volledigheid. Wij bevelen u principeel aan merkcassettes C 45, C 60 of C 90 te gebruiken.

Esta realación de cassettes probadas no presume naturalmente de ser completa. Fundamentalmente recomendamos emplear siempre cassettes de marca C 45, C 60 o C 90.

Denna uppställning över testade kassetter gör inga anspråk på att vara fullständig. Vi rekommenderar märkeskassetter C 45, C 60 eller C 90.

Questa lista di cassette approvate non pretende naturalmente di essere completa. Raccomandiamo per principio di usare cassette di marca C 45, C 60 o C 90.

* DOLBY und die Marke DD sind eingetragene Warenzeichen der Dolby Laboratories.

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* DOLBY et le signe DD sont des marques déposées de la Dolby Laboratories.

* DOLBY en het teken DD zijn gedeponeerde handelsmerken van de Dolby Laboratories.

* DOLBY y el símbolo DD son marcas registradas de Dolby Laboratories.

* DOLBY och märket DD är inregistrerade varumärken för Dolby Laboratories.

* DOLBY ed il marchio DD sono marchi depositati dei Dolby Laboratories.

Noise reduction circuit made under license from Dolby Laboratories.

* Andruckrolle oder Tonwelle durch Staub- und Bandabrieb verschmutzt. Reinigen wie in Abschnitt "Pflege, Wartung" beschrieben.

Keine Wiedergabe über den Verstärker, obwohl über Kopfhörer einwandfrei.
* Leitungsverbindung zum Verstärker unterbrochen oder falsch gesteckt.

Sie betätigen die Start-Taste ▶ **(16)** bzw. ◀ **(14)** und das Gerät schaltet sich sofort wieder ab.
* Das Band ist am Ende und der MODE-Schalter **(2)** steht auf ◀——▶.

Sie betätigen die Start-Taste ▶ **(16)** und das Gerät läuft nach ◀ **(14)**.
* Das Band ist am Ende und der MODE-Schalter **(2)** steht auf ▶◀, die Bandrichtung wird automatisch umgeschaltet.

Aufnahmebefehl wird nicht angenommen.
* Zungen in der Cassette, wie im Abschnitt "Löschen" beschrieben, sind herausgebrochen.

Eigenaufnahme ist verzerrt.
* Aufnahmequelle verursacht Verzerrungen.
* Kopf verschmutzt. Reinigen wie in Abschnitt "Pflege, Wartung" beschrieben.
* die für das verwendete Band entsprechende Bandsortenwahltaste (Fe = **(9)**, Cr = **(11)**, FeCr = **(13)**, Metal = **(15)**) war nicht gedrückt.

Eigenaufnahme rauscht:
* Band ist zu stark abgenutzt.
* DOLBY NR **(20)** war nicht betätigt.

Alte Aufnahme wird nicht sauber gelöscht.
* Löschkopf verschmutzt. Reinigen wie in Abschnitt "Pflege, Wartung" beschrieben.
* entsprechende Bandsortenwahltaste war nicht gedrückt.

Betriebsfunktionen werden nicht ausgeführt
* keine Cassette eingelegt.

Gerät schaltet beim Umspulen vorzeitig ab.
* Taste MEMORY **(30)** gedrückt, Gerät schaltet bei "000" ab. Taste ▶▶ **(17)** oder ◀◀ **(12)** drücken, bis Zahlen über 000-Stellung hinaus sind.

ENGLISH

We recommend to read this manual carefully prior to operation of your new Dual equipment. Knowing how to install and set up the unit correctly will prevent damages and malfunctions which may occur due to improper connection and operation.

Operation

(1) POWER switch
(2) MODE automatic reverse selection switch
(3) PHONES jack for stereo phones for monitoring
(4) Infrared light barrier switching off all tape transport functions when the cassette is removed
(5) Illuminated tape transport indicator
(6) Dust cover, opened automatically by the power switch
(7) Cassette holder
(8) Infrared light barrier switching off tape transport functions when the cassette is removed
(9) Fe tape selector button for Fe tapes
(10) STOP stop key
(11) Cr tape selector switch for Cr tapes
(12) ◀◀ Rapid rewind (right to left)
(13) FeCr tape selector switch for FeCr tapes
(14) ◀ starts recording or playback (left)
(15) Met Tape selector switch for metal tapes
(16) ▶ starts play or record from left to right
(17) ▶▶ fast forward (left to right)
(18) MPX-Filter switch
(19) RECORD record button
(20) DOLBY NR* for noise-free recording and playback
(21) PAUSE for stopping the tape momentarily
(22) RECORD LEVEL L level control for left channel
(23) MIC L/R microphone jacks for the left and right channels
(24) RECORD LEVEL R level control for right channel
(25) Peak recording level indicator for FeCr and metal tape
(26) Peak recording level indicator for Fe and Cr tape
(27) PEAK LEVEL INDICATOR LED's with peak value indicator
(28) DOLBY NR indicator that Dolby Nr is turned on
(29) MPX FILTER LED indicating that the MPX filter is switched on
(30) MEMORY – Stops tape transport in fast forward and rewind mode at a tape counter reading of "000".
(31) RESET reset button, resets counter to "000"
(32) Counter for locating a position on the tape

Recording preparation

Unpacking

Remove the unit and all accessories from the shipping carton. We suggest to retain the original carton and packing material in case that you need it later for safe transport.

Connection to AC Power Line

This unit can be operated on 115 V AC or 230 V AC, 50 – 60 Hz power lines. Change of line voltage or frequency should only be accomplished by authorized Dual dealers or qualified service personnel to insure compliance with existing safety regulations. **Before connecting your unit to a wall outlet, please make sure that the line voltage indicated on the name plate corresponds to the actual line voltage.**

Note: For USA and Canada only

Your unit is set for 115 V AC 60 cycle operation. If your power supply is other than the above modifications to your unit should be performed only by qualified service personnel. Insert the AC plug from your unit into a conveniently located AC outlet, or into a switched auxiliary outlet on your receiver or amplifier.

Connection to a HiFi System or Amplifier

The following jacks are provided at the rear of your HiFi stereo cassette deck (Fig. 1).

REC/PB DIN jack

If your stereo amplifier or receiver is equipped with a 5-pole DIN jack, connect it to the DIN jack REC/PB of the cassette deck by means of the DIN audio cable (Part Nr. 226 816). This cable can also be used for tape-to-tape dubbing after connecting another tape or cassette deck to your unit (with some other decks, adapter no. 226 818 may be required). This is a priority input which automatically deactivates the LINE-INPUT L/R.

LINE OUTPUT Jacks R/L

Connect these RCA (Cinch) jacks with the REC jacks of your stereo amplifier or receiver by means of the optional audio cable (Part Nr. 226 817) for recording.

LINE INPUT Jacks R/L

Connect these RCA (Cinch) jacks with the PLAY jacks of your stereo amplifier or receiver by means of the optional audio cable (Part Nr. 226 817) for playback.

If a DIN audio cable is connected to the DIN jack REC/PB the single recording and playback cables should not be connected to the RCA (Cinch) jacks LINE OUTPUT and LINE INPUT. The audio cables permit recording of program material such as AM/FM radio programs, phono discs, etc. from tuners, turntables and other components connected to your stereo amplifier or receiver.

Aforementioned audio cables are available from your Dual dealer or other HiFi and audio stores.

Playback of pre-recorded cassettes

Power Switching

To turn the unit on, depress the POWER switch **(1)**. The cassette compartment illumination will light up and the LED next to the STOP button **(10)** starts flashing. At the same time, the protective cover for the tape heads is retracted, exposing the cassette holder.

Tape Selection

Your HiFi cassette deck is equipped with four tape selector switches **(9)**, **(11)**, **(13)** and **(15)** which permit the use of all presently available tape material.
Consult the Tape Reference List (see page 3), identify the tape material to be used and press the appropriate button, which will automatically select the most appropriate recording and playback parameters.
The following list may be used as quick reference for tape selector switch settings in case that the tape used is not shown in the tape reference table (see annex).

Switch position	Tape category	Equalization	Typical tapes
Fe	Fe	3180/120 µs	BASF Super LH
Cr	CrO_2	3180/ 70 µs	BASF Chromdioxid
FeCr	FeCr (2-component)	3180/ 70 µs	Sony Duad
Met	metal tapes	3180/ 70 µs	3M Scotch metafine

For playback of pre-recorded "musicassettes" use either the Fe or Cr tape selector switch according to the instructions printed on the cassette. If such information is missing, use the Fe switch.

Auto Reverse

Operating convenience of your Dual cassette deck is greatly improved by a unique feature: the auto reverse system. It permits instantaneous change of the running direction at tape end without removing and reversing the cassette, or to change from one stereo recording to another.
Due to the twin tape transport mechanism, twin recording, playback and erasing heads, this cassette deck permits recording and playback in both running directions.
The following operations can be selected by means of the MODE switch **(2)**:

automatic shut-off at tape end in either running direction.

automatic reverse from right to left at tape end

automatic repeat in playback mode.
During recording mode, the unit will shut off automatically at tape end in right-to-left running direction.

DOLBY® NR

The built-in Dolby R Noise Reduction system effects a remarkable reduction of inherent tape noise during recording and playback, thus increasing the dynamic range of any tape used.
To play back cassettes carrying the Dolby symbol ⊡⊡ or those which were recorded with the Dolby NR system as described on page 10, depress the DOLBY NR button **(28)**. The Dolby pilot lamp **(20)** will light up, indicating that the Dolby system is activated. The built-in Dolby NR system operates automatically and does not require special adjustments or switch setting when using any of the tapes on the page 3.

Tape Counter and Memory Index

The tape counter **(32)** facilitates location of desired program material on the tape. It operates during recording, playback, fast forward and fast rewind mode.
Before you start recording, set the tape counter to "000" by depressing the RESET button **(31)**. If you note the tape counter reading at the beginning of each new recording, you'il be able to locate the desired program material on the cassette very easily during playback.
The MEMORY button **(30)**, which is coupled to the tape counter **(32)** lets you find any desired portion of the recorded program material during playback. Select this particular portion by depressing the RESET button **(31)**. If you now depress the buttons ◀◀ **(12)** or ▶▶ **(17)** at any tape position before or after the selected portion, the tape advance system will automatically stop at the correct index point.
In order to avoid interruption of a recording by accidental depression of the MEMORY button **(30)**, the memory index system will not be operating when the unit is started by means of the ◀ **(14)** or ▶ **(16)** pushbuttons.

Loading and Removing of Cassettes

Hold the cassette with the exposed tape facing downward, insert the top edge into the cassette holder as far it will go. Then press the lower edge downward into vertical position until it is latched.
A click will be heard when the cassette is properly loaded. See Fig. 2.
The cassette may be removed anytime in all operating modes without previous depressing of the STOP button **(10)**. Infrared light safety switches **(4)** and **(8)** will effect instant stop of the tape transport mechanism and retract the tape heads in order to remove the cassette.
The previously selected operating functions Start ▶ **(16)** or ◀ **(14)** will resume automatically when another cassette is inserted. Fast forward ▶▶ **(17)**, fast rewind ◀◀ **(12)** functions as well as playback start by means of ▶ **(16)** and ◀ **(14)** START pushbuttons can be instantly selected without prior operation of the STOP pushbutton **(10)**.

Fast Forward and Reverse

▶▶ **(17)** Tape runs from left to right at high speed
◀◀ **(12)** Tape runs from right to left at high speed
"Fast Forward" ▶▶ and "Fast Reverse" ◀◀ functions are used for rewinding the cassette tape and for location of desired program material.
The tape transport shuts off automatically at tape end.
Start ▶ **(16)**, Start ◀ **(14)**, RECORD **(19)** and PAUSE **(21)** functions are cancelled by depressing the "Fast Forward" **(17)** and "Fast Reverse" **(19)** bushbuttons.

Start

Recording and playback are started by buttons ▶ **(16)** and ◀ **(14)** according to the desired tape running direction. Start of the tape transport mechanism can be initiated before loading of the cassette. In this case, a feeler gauge will register loading of the cassette and start the tape transport.

PAUSE

To interrupt recordings and playbacks momentarily, depress the PAUSE button **(21)**.
The previously selected tape direction will be maintained and indicated by flashing of the LED, located next to the corresponding pushbutton (▶ or ◀).
By depressing the tape direction buttons ▶ **(16)** or ◀ **(14)** tape transport is resumed.

Auto Shut-off

This unit features an electronic tape transport monitor system which effects immediate automatic shut-off at tape end or in case of malfunctions regardless of cassette or switching foil used.

Program Monitoring with Headphones

To monitor recordings and playback, connect a stereo headphone (impedance 4 to 2000 ohms) to the PHONES jack.

How to make your own recordings

In addition to the preceding notes regarding playback of pre-recorded cassettes, the following details must be observed when making cassette tape recordings:

* Depress the tape selector switches **(9)**, **(11)**, **(13)** or **(15)** according to the tape material used.
* Depress the DOLBY NR button **(20)**. When recording FM radio programs, also depress the MPX Filter button **(18)**.
* Set the tape counter **(32)** to "000" by depressing the RESET button **(31)**.

Peak Level Indicator

This non-inertial peak level indicator permits optimum tape recordings.
The red LEDs OVERLOAD LIMIT **(25 & 26)**, are associated with the tape selector buttons **(9)**, **(11)**, **(13)** and **(15)**. They indicate the maximum permissible recording level for the respective tape used.
LEDs **(26)** indicate peak recording levels for Fe and Cr tapes, LEDs **(25)** those for FeCr and metal tapes.

Recording Level Setting

To start a recording, depress the RECORD button **(13)**, which will automatically release the PAUSE button **(21)**. The pilot

lamps located right next to these two buttons light up to indicate that the unit is now ready for recording operation.
Adjust the left channel recording level with RECORD LEVEL control L **(22)**, that of the right level with RECORD LEVEL control R **(24)**. The correct recording level can be checked by means of the bar-type LED indicators. Optimum recording level is achieved, when all of the green indicator LEDs light up and the red LEDs which mark the upper limit of the recording level, starts flickering at very loud program passages.
The total dynamic range of the tape material cannot be utilized if the recording level is set too low, whereas excessive recording levels will cause audible distortion.

Use of the MPX Filter

In order to avoid RF noise (pilot and subcarrier signals) when recording FM radio programs, depress the MPX pushbutton **(18)**. The corresponding LED **(29)** will light up, indicating that the MPX filter circuit is in operation. It is recommended to switch the MPX filter off for tape dubbing, recording of phono discs and microphone signals by releasing the MPX FILTER pushbutton **(18)**.

Recording

In order to start recording, depress the ▶ **(16)** or ◀ **(14)** pushbutton.
The signals will now be recorded on tape. The following sections describe additional operational details for recording of different program sources.

Recording of Phono Discs

Use either one of the following turntable connections for recording of phono discs:

1. Connect your cassette deck to the TAPE REC and TAPE PLAY jacks and the turntable to the PHONO jacks or your stereo amplifier or receiver. Set the INPUT SELECTOR switch to PHONO.
2. You may also connect your record player directly to the cassette deck as follows:
   If your turntable is equipped with separate output cables and RCA (Cinch) plugs, connect the left channel output cable (white) to the LINE INPUT L jack, the right channel output cable (black or red) to the LINE INPUT R jack of your cassette deck. Turntables with 5-pin DIN plugs must be connected to the REC/PB DIN socket of your unit. Whereas turntables with high-Z crystal or ceramic phono cartridges can be connected directly, a pre-amplifier/equalizer such as Dual TVV 47 is required for turntables with moving magnet or moving coil cartridges. In this case, an additional adapter cable (Dual part Nr. 262 483) is required for turntables with separate output cables and RCA (Cinch) plugs.

Recording of Radio Programs

If your cassette deck is connected to a receiver or a tuner/amplifier combination, recordings of radio programs are possible without additional system wiring.
It is also possible to connect a FM/AM tuner directly to your cassette deck as follows: connect the left channel output cable of the tuner to the LINE INPUT L, the right output cable to the LINE INPUT R jacks of your unit. Tuners with 5-pin DIN plugs must be connected to the REC/PB DIN socket of the cassette deck.

Tape Dubbing

Tape recording may be duplicated easily by connecting another cassette deck or open-reel tape deck to your unit with the aid of the audio cable supplied. Connect this cable to the 5-lug DIN socket of the other tape or cassette deck and the DIN socket REC/PB of your unit. Then set the other deck in PLAY mode, your unit to RECORD mode. Tape dubbing is also possible in opposite direction. In this case you will eventually need a tape dubbing adaptor (Dual part Nr. 226 818), which must be connected to the RECORD jacks of the other deck.
If the other deck is equipped with RCA (Cinch) jacks, always connect the recording cable with the LINE INPUT, the playback cable with the LINE OUTPUT jacks, taking care not to mix up the left and right channels.

Microphone Recordings

Any low or medium impedance microphone (200 – 1000 ohms) with shielded cable and 1/4" plug may be connected to your cassette deck. We recommend, however, to use Dual HiFi electret condensor microphones type MC 304 or MC 316.
For stereo recordings always use two identical monaural or a special stereo microphone. When using monaural microphones only the channel, to which the microphone is connected, will be in operation. Set the level control of the unused channel to "0" position. All other channel inputs are automatically deactivated when a microphone is connected.

Erasing

If the unit is set to RECORD mode, all previous recordings on the track used (depending on tape running direction) will automatically be erased. To erase a cassette without new recording, set the unit to RECORD mode and let the tape advance from one end to the other, leaving the level control in "0" position.
To prevent accidental erasure of recordings, break off the protective plastic tabs at the upper edge of the cassette.
Commercially available prerecorded cassettes (so-called "musicassettes") are always protected against accidental erasing in such a manner.
In order to re-use such cassettes for future recording, close the exposed holes at the upper edge of the cassette by small pieces of adhesive tape.
Please take care not to accidentally close additional openings of CrO_2 cassettes.

Technical Features

Drive System

Your cassette deck features a two-motor drive system. Capstan drive is accomplished by means of a DC motor with IC speed governor and integrated servo frequency generator. Motor torque is transferred to the capstans by a precision-machined flat belt, resulting in excellent wow-and-flutter characteristics.
A second motor is used for contant-speed tape advance in both running directions. This independent tape transport system prevents tape speed fluctuations caused by different winding volume of the cassette reels.
Tape transport is continuously monitored by a special electronic system which effects instant shut-off at tape end, regardless of the tape of cassette or switching foils used.
Precise tape guides and tape head azimuth alignment assure optimum treble response and prevent level fluctuations.

Tape Head

The built-in M + X 4/4-track tape head features excellent magnetic properties in recording and playback modes as well as extended life expectancy.
The dual-gap erasing head warrants complete erasure of recorded program material, even with the new metal type, which is somewhat critical in this respect.

Compact Cassette System

Your HiFi Stereo Cassette Deck is of the 4/4-track type. This means that the total width of the tape is subdivided into four tracks with one pair of stereo tracks in each running direction.
Stereo recordings made with your cassette deck may be reproduced on any monaural cassette deck which means that stereo and mono cassettes are fully compatible. Your cassette deck also permits reproduction of recordings, made with other cassette recorders.

Maintenance

It is recommended to clean tape heads, capstan, pinch roller and tape guide at regular intervals.
Use a piece of clean linen cloth or a cotton swab (such as Q-Tips), damped in alcohol for cleaning. Do not use metal tools, such as tweezers for cleaning and avoid touching the tape head surfaces with your fingers. Clean the pinch roller with a dry, lint-free cloth.

Long-time lubrication of all bearings, joints and other friction points assures trouble-free operation of your cassette deck for years. Do not attempt to lubricate the unit yourself, since only special lubricants can be used. Other repair and maintenance work should be carried out only by qualified service technicians or an authorized Dual service center.

Troubleshooting

Malfunctions which may arise during the operation of your cassette deck are frequently caused by improper installation, connection or operation. Possible causes and corrective actions are listed below. If you are unable to eliminate the problem encountered with the aid of this troubleshooting guide, please consult your nearest Dual dealer or service shop.

Unit does not work after depressing of POWER switch.
* Improper connection of power cord. Power outlet inactive.

Unit switches off 1 to 2 seconds after depressing the POWER switch.
* Excessive tape friction of the cassette. Rotate reel hub of the cassette. Rotate reel hub of the pickup reel by inserting a pencil and turning hub or rewind tape by ▶▶ **(17)** or ◀◀ **(12)** pushbuttons. If the problem cannot be eliminated, tap the cassette briskly on a table top to entangle the stuck winding.
* Tape pinched between capstan and pinch roller.

Wow and Flutter.
* Excessive tape friction or pickup reel wound too tightly.
* Dirty capstan and pinch roller. Remove dust and tape abrasion as described under "Maintenance", above.

No reproduction through amplifier or receiver, only with headphones.
* Audio cable between cassette deck and amplifier or receiver defective or improperly connected.

Unit shuts off immediately after depressing START pushbuttons ▶ **(16)** or ◀ **(14)**.
* Cassette tape completely wound up (tape end) with MODE switch **(2)** in ⟵ position.

Tape running direction reverses from right to left after depressing of START pushbutton ▶ **(16)**.
* Tape running direction reverses automatically at tape end in ⟵⟶ position of MODE switch **(2)**.

Unit does not operate in RECORD mode.
* Safety tabs of cassette have been removed. Refer to section "Erasure".

Distorted Recording.
* Distorted program source.
* Dirty recording head. Clean as described in section "Maintenance".
* Improper setting of tape selector switches Fe **(9)**, Cr **(11)**, FeCr **(13)**, or Metal **(15)**.

Noisy Recording.
* Worn-out tape.
* DOLBY NR pushbutton **(20)** was not depressed in recording mode.

Previous recording not properly erased.
* Dirty erase head. Clean as described in section "Maintenance".
* Improper setting of tape selector switch.

Unit fails to operate.
* Cassette not inserted.

Tape stops prematurely in REWIND mode.
* MEMORY pushbutton **(30)** is depressed. Unit shuts off automatically at "000" reading of tape counter. Depress ▶▶ **(17)** or ◀◀ **(12)** pushbutton to advance tape past the "000" tape counter reading.

(*possible cause and correction of the fault).

FRANÇAIS

Avant de mettre votre ampli hifi-stéréo en marche pour la première fois, lisez attentivement cette notice d'emploi. Cela vous évitera de commettre des erreurs de branchement ou de manipulation et d'endommager votre appareil.

Maniement

(1) POWER interrupteur secteur
(2) MODE sélection du sens de défilement de la bande
(3) PHONES prise pour casque d'écoute stéréo pour contrôle simultané
(4) Barrière lumineuse à infrarouges, déconnecte toutes les fonctions du mécanisme d'entraînement lorsque la cassette est retirée
(5) Indicateur lumineux pour le bobinage de la bande
(6) Couvercle de protection — s'ouvre automatiquement lorsque l'interrupteur secteur est actionné
(7) Casier à cassette
(8) Barrière lumineuse à infrarouges, déconnecte toutes les fonctions du mécanisme d'entraînement lorsque la cassette est retirée
(9) Fe Touche de sélection du type de bande, pour bandes Fe
(10) STOP Touche d'arrêt
(11) Cr Touche de sélection du type de bande, pour bandes Cr
(12) ◀◀ Rebobinage rapide (de droite à gauche)
(13) FeCr Touche de sélection du type de bande, pour bandes FeCr
(14) ◀ Démarre la lecture et l'enregistrement (gauche)
(15) Met Touche de sélection du type de bande, pour bandes en fer pur
(16) ▶ démarrage de la reproduction et de l'enregistrement, la bande défilant vers la droite
(17) ▶▶ bobinage rapide en avant (gauche ⟶ droite)
(18) Filtre MPX déconnectable
(19) RECORD Touche d'enregistrement
(20) DOLBY NR* Pour un enregistrement et une reproduction exempts de souffle
(21) PAUSE Pour un arrêt momentané de la bande
(22) RECORD LEVEL L Régulateur de modulation pour le canal gauche
(23) MIC L/R prises pour micro, canal droit et gauche
(24) RECORD LEVEL R Régulateur de modulation pour le canal droit
(25) Affichage lumineux de la limite de modulation pour les cassettes FeCr et métal
(26) Affichage lumineux de la limite de modulation pour les cassettes Fe et Cr
(27) PEAK LEVEL INDICATOR LED indicateur optique à diodes luminescentes avec affichage de la valeur de crête
(28) DOLBY NR voyant lumineux signalant que le Dolby Nr est connecté
(29) MPX FILTER Visualisation lumineuse indiquant que le filtre MPX est connecté
(30) MEMORY déclenche l'appareil lorsque le compteur atteint 000 lors du rebobinage rapide en avant ou en arrière
(31) RESET Touche de remise à zéro, fait revenir le compteur à "000"
(32) Compteur permettant de retrouver un emplacement déterminé de la bande

Préparation

Déballage

Retirez l'appareil et ses accessoires de l'emballage. Nous vous recommandons de conserver l'emballage d'origine (pour un éventuel transport ultérieur).

Raccordement au secteur

Les appareils originaux sont réglés sur 230 V/50 et 60 Hz, ou 115 V/50 et 60 Hz. Le passage à une autre tension de secteur, compte tenu des prescriptions de sécurité, ne doit être confié qu'au revendeur ou à un service après-vente Dual.

Avant d'effectuer le branchement, veuillez vérifier si la tension indiquée sur la plaquette signalétique de votre appareil correspond à la tension du secteur.

Con una regolazione del livello troppo bassa non si sfrutta la dinamica del nastro. Con una registrazione troppo alta del livello si corre il pericolo di distorsioni percettibili.

Scelta del filtro MPX

Il filtro MPX inseribile mediante il tasto **(18)** sopprime le alte frequenze disturbanti durante le registrazioni da programmi sulle onde ultracorte. A questo scopo premere questo tasto. Il diodo luminoso MPX FILTER **(29)** si accende, se il tasto MPX **(18)** è premuto. Con registrazioni da dischi, da nastro a nastro e dal microfono è oppurtuno disinserire il filtro MPX (sollevare ancora il tasto).

Avviamento della registrazione

Una pressione sul tasto ▶ **(16)** o ◀ **(14)** avvia il nastro che ora registra.
Ulteriori punti da osservare per la registrazione dalle differenti fonti di programmi trovate nei paragrafi seguenti.

Registrazione da dischi

Per il collegamento del giradischi ci sono le seguenti possibilità:

1. Il giradischi e la piastra di registrazione sono collegati ad un amplificatore stereo oppure ad un ricevente apparecchio pilota. In questo caso portate il selettore d'ingresso dell'apparecchio di comando (amplificatore) su PHONO.
2. Per il collegamento diretto di un giradischi alla piastra di registrazione di cassette procedete come segue:
   Collegare i giradischi, i cui cavi audio sono dotati di spine Cinch, alle prese LINE INPUT (nero = canale destro, bianco = canale sinistro) e quelli con spine DIN alla presa REC/PB. I giradischi muniti di cartuccia piezo-elettrica (di ceramica o di cristallo) si collegano direttamente. Per i giradischi con cartuccia magnetica o dinamica si ha bisogno dell'equalizzatore-preamplificatore (Dual TVV 47). Usando giradischi con cavo audio Cinch si ha bisogno anche dell'adattatore Dual art.no. 262 483.

Registrazione da programmi radiofonici

Si possono effettuare registrazioni dalla radio, senza cambiare le congiunzioni dei cavi, se la piastra di registrazione a cassette e un sintonizzatore (sezione radio) sono collegati ad un amplificatore HiFi.
Se si desidera collegare un sintonizzatore direttamente alla piastra di registrazione si eseguirà il collegamento via le prese LINE INPUT usando cavi audio con connettori Cinch (nero = canale destro, bianco = canale sinistro) e via le presa REC/PB usando cavi con connettori DIN.

Registrazioni dal registratore a nastro

Se volete registrare sulla vostra piastra di registrazione a cassette da un registratore a nastro o da un altro registratore a cassette, questo è possibile con il cavo audio di cui la vostra piastra di registrazione a cassette è dotata e con il quale si collega l'apparecchio che sta registrando via la presa REC/PB. Per il doppiaggio invece dal vostro registratore a cassette ad un altro a nastro oppure a cassette si ha eventualmente bisogno dell'adattatore Dual, art.no. 226 818, che bisogna connettere con la presa di collegamento dell'apparecchio che sta registrando.
Se si fa il collegamento via le prese Cinch bisogna connettere il cavo audio dell'apparecchio che sta registrando sempre con le prese LINE INPUT e quello dell'apparecchio in riproduzione con le prese LINE OUTPUT.

Registrazioni con microfono

Potete collegare alla vostra piastra di registrazione a cassette HiFi stereo dei microfoni di bassa e media impedenza da 200 – 1000 Ohm e spine coassiali dal ϕ di 6,35 mm (1/4").
A questo scopo raccomandiamo i microfoni HiFi Electret a condensatore Dual MC 304 e Dual MC 316.
Per le registrazioni in stereo bisogna usare sempre due monomicrofoni uguali oppure un microfono stereo.
Con i registrazioni monoaurali per microfono si pilota solo quel canale che è collegato al microfono. Raccomandiamo di riportare il controllo per il livello di registrazione che non si sta usando allo "0". Collegando un microfono gli altri ingressi del rispettivo canale vengono disinseriti.

Cancellazione

Con ogni registrazione l'apparecchio cancella l'incisione che si trova sulla cassetta nella rispettiva direzione del nastro. Volendo cancellare un'incisione – senza effettuare una nuova registrazione – suonate il rispettivo pezzo della cassetta con il controllo in posizione "registrazione" ed i regolatori del livello in posizione "0".
Tutte le cassette hanno sul retro due aperture che sono chiuse da linguette di plastica. Rompendo queste linguette si possono proteggere le prpprie registrazioni contro una cancellazione involontaria.
Le cassette che si trovano in commercio sono già protette in questo modo contro una cancellazione involontaria.
Se volete registrare su una cassetta protetta in questo modo, sarà sufficiente chiudere l'apertura con una striscia di nastro adesivo.
Fatte attenzione a non coprire anche le aperture addizionali che si trovano sulle cassette CrO_2.

Dati tecnici

Trasmissione

La vostra piastra di registrazione a cassette ha un movimento bimotore. Il motore a corrente continua con generatore di frequenza integrato ed equipaggiato di un moderno IC aggiustabile per la regolazione dei numeri di giri aziona i capstan via una cinghia piana di precisione e contribuisce alla straordinaria costanza di velocità.
I dispositivi di ribobinatura per la corsa a destra ed a sinistra ricevono il loro movimento di rotazione tramite il secondo motore, dimodoché gli eventuali disturbi, per es. dovuti a differenze nell'avvolgimento della cassetta non influiscano in nessun modo sul trasporto del nastro.
La parte elettronica sorveglia continamente lo scorrimento del nastro e provoca lo spegnimento dell'apparecchio alla fine del nastro. Questo dispositivo automatico lavora indipendentemente della cassetta e delle lamine comanda nastro.
Un'accurata guida del nastro ed una regolazione azimutale precisa assicurano la migliore riproduzione dei toni acuti ed evitano le variazioni di livello.

Testina

La testina in M + X duro a 4/4 tracce offre delle qualità magnetiche eccellenti per registrazioni e riproduzioni assieme ad un'alta resistenza al logorio.
Le testine di cancellazione a due piste garantiscono una perfetta cancellazione anche con i nastri di ferro puro, considerati specialmente critici a questo riguardo.

Sistema di cassette compatte

La vostra piastra di registrazione a cassette funziona con la tecnica a 4/4 piste. Quattro piste sono provviste su tutta la larghezza del nastro e si hanno a disposizione due piste stereo in ogni direzione del nastro. La lunghezza del nastro viene perciò sfruttata per il doppio tempo di riproduzioni stereofoniche.
Le cassette incise in stereo sul vostro registratore a cassette possono essere suonate anche su registratori a cassette mono, cioè le cassette stereo e quelle mono sono compatibili. Qualsiasi cassetta registrata con un altro registratore può essere riprodotta con la vostra piastra di registrazione a cassette.

Cura e manutenzione

Raccomandiamo di pulire di tanto in tanto le testine, i capstan e le guide del nastro.
Per la pulizia si usa un panno di lino inumidito d'alcool oppure un bastoncino tipo "cotton fioc". Non usare, per favore, degli oggetti metallici e non toccare gli specchi delle testine con le dita. Il rullo di pressione si pulisce con uno straccio asiciutto e che non si sfilacci.
Dato che tutti i punti di lubrificazione sono stati sufficientemente oliati, in condizioni normali, il vostro apparecchio funzionerà regolarmente per anni. Non tentate di lubrificare voi stessi questi punti; si devono usare soltanto lubrificanti speciali.
Senza conoscere bene i meccanismi e la parte elettronica è consigliabile di affidare tutti gli interventi o le riparazioni al vostro rivenditore specializzato oppure alla più vicina officina d'assistenza autorizzata.

Eliminazione di disturbi

Se doveste notare dei difetti di funzionamento al vostro registratore a cassette, controllate, per favore, se eventualmente non sono dovuti ad un semplice errore d'uso. La lista seguente vi aiuterà a trovare il difetto. Se ci fossero dei disturbi inspiegabili, rivolgetevi, per favore, al vostro rivenditore specializzato oppure al più vicino centro d'assistenza Dual.
(* possibile causa oppure rimedio al difetto)

L'apparecchio non si accende.
* L'alimentazione di corrente è interrotta, cattivo contatto con la presa.

L'apparecchio si spegne 1 – 2 secondi dopo l'accensione.
* La cassetta ha troppo attrito, girare il nastro a mano un poco avanti o ribobinarlo (▶▶ **(17)**, ◀◀ **(12)**). In casi estremi si può rimediare tramite scosse, per es. battendo la cassetta sul tavolo.
* Introducendo la cassetta il nastro si è infilato dietro il capstan.

La riproduzione varia nell'altezza del tono.
* Il nastro appiccica troppo o è avvolto troppo stretto. Ribobinare la cassetta.
* Il rullo di pressione o il capstan sono sporchi di polvere o di abrasioni del nastro. Pulire come descritto nel paragrafo "Cura, manutenzione".

Nessuna riproduzione tramite l'amplificatore, malgrado che la cuffia funziona perfettamente.
* La connessione con l'amplificatore è interrotta oppure non corretta.

Dopo l'azionamento del tasto d'avviamento ▶ **(16)** o ◀ **(14)** l'apparecchio si spegne subito ancora.
* E' la fine del nastro e l'interruttore MODE **(2)** è su ⟵.

Si aziona il tasto d'avviamento ▶ **(16)** e l'apparecchio va in direzione ◀ **(14)**.
* E' la fine del nastro e l'interruttore MODE **(2)** è su ⟶, la direzione del nastro viene commutata automaticamente.

Il comando di registrare non viene eseguito.
* Le linguette nella cassetta sono state tolte, come descritto nel capitolo "Cancellazione".

La registrazione propria presenta distorsioni.
* La fonte di registrazione causa delle distorsioni.
* La testina è sporca. Pulire come descritto nel paragrafo "Cura, manutenzione".
* Il tasto selettore nastro (Fe = **(9)**, Cr = **(11)**, FeCr = **(13)**, Metal = **(15)**) rispettivo al nastro in uso non è stato premuto.

La registrazione propria presenta fruscio.
* Il nastro e troppo logorato.
* Il tasto DOLBY NR **(20)** non è stato azionato.

La registrazione precedente non si cancella perfettamente.
* La testina di cancellazione è sporca. Pulire come descritto nel paragrafo "Cura, manutenzione".
* Il tasto selettore nastro corrispondente non è stato premuto.

Le funzioni scelte non vengono eseguite.
* Manca la cassetta.

L'apparecchio si spegne in anticipo durante la ribobinatura.
* Il tasto MEMORY **(30)** è premuto, l'apparecchio si spegne a "000". Premere il tasto ▶▶ **(17)** o ◀◀ **(12)**, finché i numeri vanno oltre la posizione "000".

Technische Daten (typische Werte) Das Gerät erfüllt bzw. übertrifft die in DIN 45 500 festgelegten Anforderungen an Geräte der Heimstudio-Technik HiFi).	**Technical Data (typical value)** The unit meets the requirements of DIN 45 500 for domestic HiFi equipment. The data given are based on the current DIN reference tapes.	**Caractéristiques techniques (valeur caractéristique)** Cet appareil surpasse par ses performances les exigences de la norme DIN 45 500 (matériel HiFi, grand public).	
Bandgeschwindigkeit	**Tape speed**	**Vitesse de bande**	4,75 cm/s (1 7/8 ips)
Abweichung von der Soll-Geschwindigkeit	**Deviation from correct speed**	**Ecart de la vitesse de référence**	±0,7 %
Kurzzeitige Geschwindigkeitsschwankungen (Tonhöhenschwankungen) W.R.M.S. nach DIN nur Wiedergabe nach DIN Aufnahme/Wiedergabe	**Wow and flutter** Weighted RMS to DIN for playback only to DIN for recording/playback	**Fluctuations instantanées de la vitesse** (variations de la hauteur du son) W.R.M.S. suivant DIN uniquement lecture suivant DIN enregistrement/lecture	 ±0,04 % ±0,08 % ±0,11 %
Übertragungsbereich (bezogen auf DIN-Toleranzfeld) Fe -Band CrO_2-Band FeCr-Band Reineisen-Band	**Frequency response** (ref. to DIN tolerances) Standard Fe tape CrO_2 tape FeCr tape Pure metal tape	**Bande passante** (ramenée à la plage de tolérance DIN) Bande Fe Bande CrO_2 Bande FeCr Bande fer pur	 30 – 16 500 Hz 30 – 17 000 Hz 30 – 18 000 Hz 30 – 19 000 Hz
Ruhegeräuschspannungsabstand mit Dolby NR Fe -Band CrO_2-Band FeCr-Band Reineisen-Band	**Signal-to-noise-ratio** with Dolby NR Standard Fe tape CrO_2 tape FeCr tape Pure metal tape	**Rapport signal/bruit** avec Dolby NR Bande Fe Bande CrO_2 Bande FeCr Bande fer pur	 66 dB 66 dB 69 dB 69 dB
Übersprechdämpfung (bei 1 000 Hz) zwischen zusammengehörigen Kanälen zwischen Kanälen in Gegenrichtung	**Channel separation** (at 1,000 Hz) between stereo channels in opposite direction	**Diaphonie** (à 1 000 Hz) en sens stéréo en sens inverse	 35 dB 62 dB
Löschdämpfung bei 1 000 Hz	**Erasure** at 1,000 Hz	**Atténuation d'effacement** à 1 000 Hz	70 dB
Oszillator-Frequenz (Gegentaktoszillator)	**Oscillator** (push/pull oscillator)	**Fréquence de l'oscillateur** (oscillateur push-pull)	 105 kHz
Eingänge (Empfindlichkeit für 0 dB) Mikrofon (1/4" Koax.-Buchse) Receiver/Verstärker (DIN-Buchse) Receiver/Verstärker (RCA-Buchsen)	**Inputs** (sensivity at 0 dB) Microphone (1/4" coaxial jack) Receiver/amplifier (DIN connector) Receiver/amplifier (RCA jacks)	**Entrées** (sensibilité pour 0 dB) Micro (prise coaxiale de 1/4") Ampli-tuner/amplificateur (prise DIN) Ampli-tuner/amplificateur (prise RCA)	 0,3 mV/ 5 kOhm 1 mV/10 kOhm 80 mV/60 kOhm
Ausgänge Receiver/Verstärker (DIN-Buchse) Receiver/Verstärker (RCA-Buchsen) Kopfhörer (1/4" Koax. Buchse)	**Outputs** Receiver/amplifier (DIN connector) Receiver/amplifier (RCA jacks) Headphones (1/4 coaxial jack)	**Sorties** Ampli-tuner/amplificateur (prise DIN) Ampli-tuner/amplificateur (prises RCA) Casque d'écoute (prise coaxiale de 1/4")	 550 mV/5 kOhm 560 mV/5 kOhm 4 – 2 000 Ohm
Umspulzeit für C 60 Cassette	**Fast winding time** for C 60 cassettes	**Temps de rebobinage** pour cassette C 60	 80 sec.
Bandlaufüberwachung (elektronisch) Abschaltzeit	**Tape monitor** (electronically) shut-off time	**Contrôle du défilement de bande** (électronique) temps de déclenchement	 1,2 s
Netzspannung	**Line voltage**	**Tension secteur**	115 V und 230 V oder 115 V
Netzfrequenz	**Line frequency**	**Fréquence secteur**	50 / 60 Hz
Leistungsaufnahme	**Power requirement**	**Consommation**	25 Watt

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